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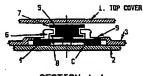
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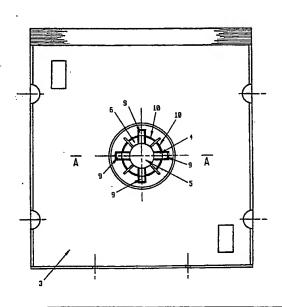
(54) Title: COMPACT DISC (CD) INSERT-RELEASE SYSTEM

(57) Abstract

A system for inserting a compact disc (CD) into a storage tray (3) and for performing instant pop up of the CD over the clamps (6) by pressing a release button (5). By using this system the CD is protected against damage that might be done to the CD during the process of taking the CD out from the storage tray (3).



SECTION A-A



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Title of invention: COMPACT DISC (CD) INSERT - RELEASE SYSTEM.

The invention is described in the following statement;

The compact disc named (CD) is known as a device used to store data on it with a hole (K) in a centre. -(refer to FIG.1)

5 The CD insert - release system is designed to protect the CD against damage done to the CD by bending the CD or scratching on the active side of the CD during the process of taking the CD out from a storage tray.

The present invention provides simple operation to insert the CD into 10 the storage tray and also provides instant pop up of the CD over the clamps by pressing a button.

The principle feature of the present system is the function of the release button (5) which is placed in the centre of the stored CD.

To assist with the understanding of the invention refer to the drawings:

15 FIG.1 shows CD basic properties.

FIG.2, FIG.3 shows release button and spring.

FIG.4, FIG.5 and FIG.6 shows examples of the CD insert-release system function principles.

FIG.7 shows diagram of operation sequences.

20 FIG.8 accompanying the abstract

The RKIEASE HUTTON (5) when pressed is arranged to activate all arms of a spring (4) and then to release the detents (10) located on the clamps (6). -(refer to FIG.2 and FIG.4)

The SPRING (4) is designed to remain with <u>no tension</u> during the

25 storage period. The arms of spring having push out projections (9) on

each arm where the total number of the projections is 3(three) or more.

-(refer to FIG.3)

The PROJECTIONS (9) are integrated with the spring (4) and are engaged to pop up the CD over the clamps (6). The top surface of all the projections (9) are used also as the storage place for the CD during the storage period. -(refer to FIG.4)

5 The CIAMPS (6) are integrated with the storage tray (3) and are engaged to keep the CD firmly in the storage position. -(refer to FIG.4)

The STORAGE TRAY (3) comprise the clamps (6) and is permanently placed in a storage box (2). -(refer to FIG.3)

The DETENTS (10) are engaged to arrest the CD and are integrated with 10 the clamps (6) where the total number of detents is 3(three) or more. -(refer to FIG.4)

The release button (5), the spring (4), the storage tray (3) with the clamps (6) and the detents (10) all may be made of any suitable material, such as moulded plastic or metal.

Referring to FIG. 2 and FIG.3 it can be seen that the release button (5) and the spring (4) can be manufactured as separate parts. The lower enlarged end (8) of the release button (5) is designed to be clicked in, and permanently held in the center of all clamps (6).

The pivoting points labelled (C) are located on each spring arm with an empirically defined equal distance from the centre of the spring (4) to suit required tension in spring based on material properties.

Referring to FIG.4 it can be seen that the CD is in storage position. Also it can be seen that the gap labelled (D) is designed to provide relevant tension in the spring (4) after the button (5) has been pressed down as much as is necessary to pop up the CD over the clamps by the projection pins (9). The gap labelled (E) is designed to provide space for total movement of the release button (5) to come down. The gap labelled (G) is provided to keep clearance between the storage tray and the active side of the CD during the storage period.

The gap labelled (F) between the release button (5) and all of the clamps (6) is designed to perform concentric movement of all the clamps (6) required for both major operations; one to put the CD in storage position and another is to release all detents (10). For smooth operation purpose the chamfer labelled (B) is provided on each clamp (6).

Referring to FIG.5 it can be seen that the CD is out of clamped position. Also it can be seen that the location of all the top surface of the projections (9) are defined as the area with <u>no bigger</u> diameter than the standard core area (L) free of recorded data on the CD.

10 - (refer to FIG.1 and FIG.5).

Referring to FIG.6 it can be seen that the shape and the size of the core hole labelled (H) in storage tray (3) is designed to suit the sizes of the spring (4) and the release button (5).

The claims defining the invention are as follows:

- A compact disc (CD) insert-release system as a device comprising a release button, a storage tray, a spring, a clamp, a projection and a detent to perform operations of inserting said CD into said storage tray and to perform instant pop up of said CD over said clamps by pressing said release button which is placed in the centre of the stored said CD.
 - The compact disc (CD) insert release system as a device of claim
 wherein said release button comprising a lower and an upper enlarged ends is engaged to energise all arms of said spring.
- 3. The compact disc (CD) insert release system as a device of claim 2 wherein said lower enlarged end of said release button is permanently held in the centre of all said clamps and said upper enlarged end is engaged to contract all said clamps during the movement down and than subsequently to release all said detents.
- 15 4. The compact disc (CD) insert release system as a device of claim 1 wherein said storage tray comprise a core hole and said clamps.
 - 5. The compact disc (CD) insert release system as a device of claim 4 wherein said clamps comprises said detents where the total number of said detents is 3(three) or more.
- 20 6. The compact disc (CD) insert release system as a device of claims 1 and 2 wherein said spring comprise said arms having push out said projections on each said arm where the total number of said projections is 3(three) or more.

- 7. The compact disc (CD) insert release system as a device of claims 2 and 4 wherein said core hole is arranged to suit the shapes and sizes of said spring and said release button.
- 8. A compact disc (CD) insert release system as a device substantially5 as herein described with reference to the accompanying drawings.

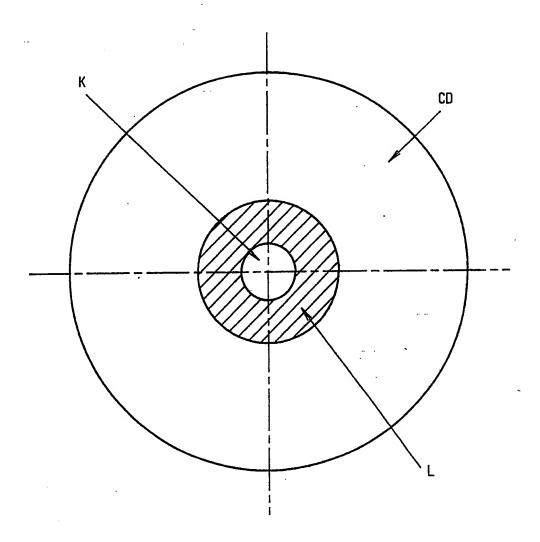


FIG. 1
SUBSTITUTE SHEET

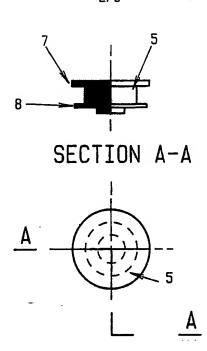


FIG.2

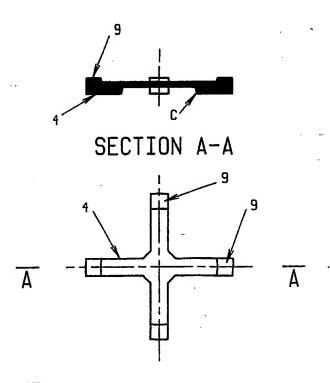


FIG. 3
SUBSTITUTE SHEET

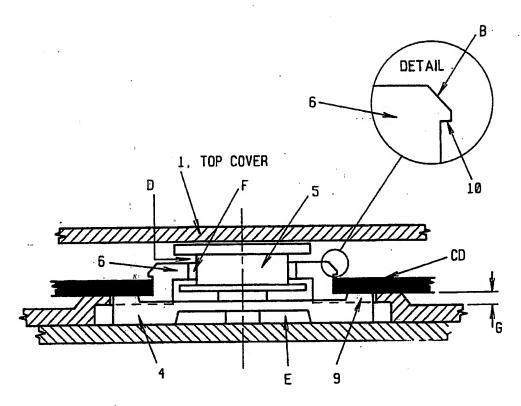


FIG.4 SECTION

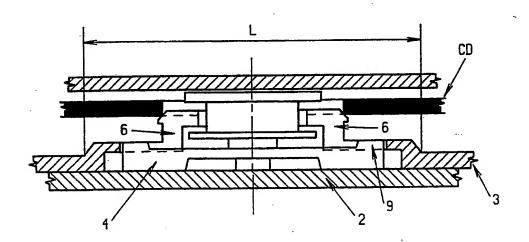


FIG.5 SECTION

SUBSTITUTE SMEET

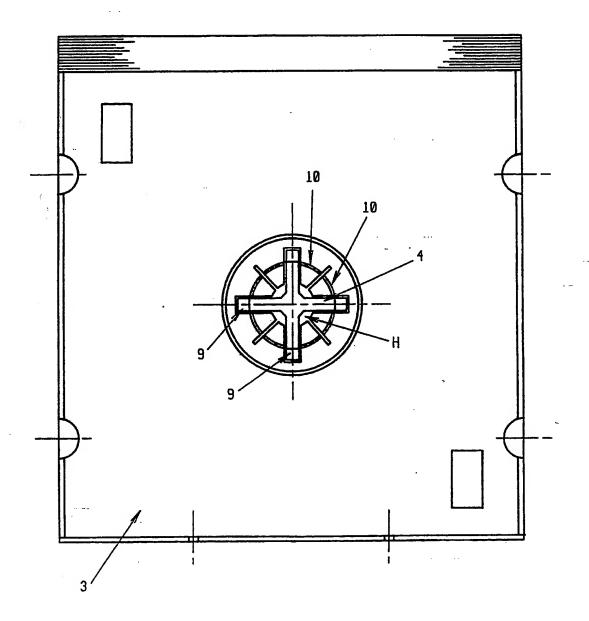
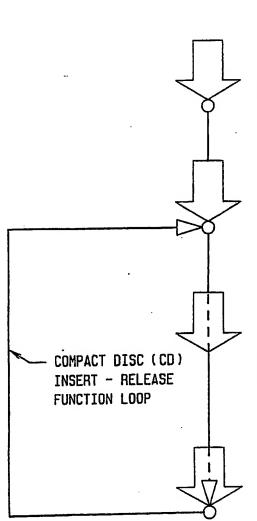


FIG.6
SUBSTITUTE SHEET

DIAGRAM OF OPERATION SEQUENCES



OPERATION No.1
Place CD in the centre of the release button (5).

OPERATION No.2

Press CD with fingers into the storage clamp (6) until the click occurs. The CD is now <u>in storage position</u>.

OPERATION No.3

Press CD release button (5) to provide increasing tension in all arms of the spring (4) until the top of the CD (non active side) reach the bottom surface of all detents (10) located on CD clamps (6).—(refer to FIG.4)

OPERATION No.4

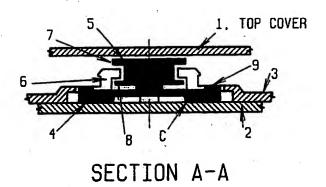
Press the button (5) further more until all the CD clamps (6) will be pushed down to release all detents (10) and finally energise the spring (4) which will pop up the CD by all projection pins (9).

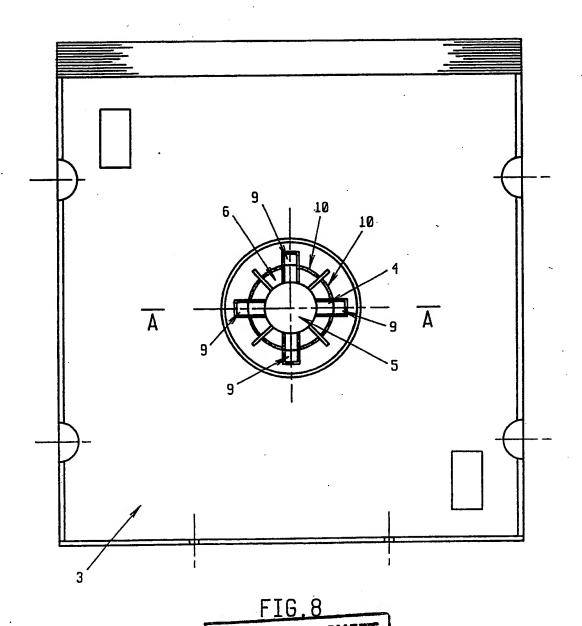
The CD is <u>out of clamped position</u> -ready to be easily taken.

To store CD in the storage clamps (6) - go through operations No.1 and No.2.

To release CD from the storage clamp (6) - go through operations No.3 and No.4.

SUBSTITUTE SHEET





A. Int. Cl. ⁵ G1	CLASSIFICATION OF SUBJECT MATTER 1B 33/04 B65D 85/57			
According to	International Patent Classification (IPC) or to bot	h national classification and IPC		
В.	FIELDS SEARCHED			
	cumentation searched (classification system follow 33/04, 23/03, B65D 85/57	ved by classification symbols)		
Documentation AU: IPC as	on searched other than minimum documentation to above.	o the extent that such documents are included in	the fields searched	
Electronic da	ta base consulted during the international search ((name of data base, and where practicable, sear	ch terms used)	
C.	DOCUMENTS CONSIDERED TO BE RELEV	VANT		
Category*	Citation of document, with indication, where	e appropriate, of the relevant passages	Relevant to Claim No.	
x	EP, A2, 429195 (WYATT) 29 May 1991 See the whole document, especially colum		(1-5, 8)	
X	US,A, 4793479 (OTSUKA et al.) 27 Dece See column 4, lines 3-65 and Fig. 6A.	ember 1988 (27.12.88)	(1,2,4,5,8)	
A	Patents Abstracts of Japan, M-1043, page (Shoei PACK K.K.) 15 August 1990 (15.0			
Furti	ner documents are listed e continuation of Box C.	See patent family annex		
"A" docu "E" carli inter docu or wanoil "O" docu exhii	ial categories of cited documents: ment defining the general state of the art which is considered to be of particular relevance or document but published on or after the national filing date ment which may throw doubts on priority claim(s hich is cited to establish the publication date of her citation or other special reason (as specified) ment referring to an oral disclosure, use, oition or other means ment published prior to the international filing dat ater than the priority date claimed	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle of theory underlying the invention document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document is taken alone document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the	actual completion of the international search	Date of mailing of the international search re-	port	
16 October	1992 (16.10.92)	19 Oct 1992 (19, 10.9		
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA J.W. THOMSON				
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ategory*	Citation of document, with indication, where appropriate of the relevant passages	Relevant to Claim No.
A	DE,A, 3715187 (HAGER) 24 November 1988 (24.11.88) See the whole document.	
A	DE,A, 3425579 (POLYGRAM GmbH) 16 January 1986 (16/01/86) See the whole document, especially pages 9 and 10 and Fig. 7.	
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Box I	0	bservations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)		
This international search report has not established in respect of certain claims under Article 17(2)(a) for the following reasons:				
1.		Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:		
2.		Claim Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:		
		Claims Van A and 7		
3.	X	Claims Nos.: 6 and 7 because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).		
Box II	O	bservations where unity of invention is lacking (Continuation of item 2 of first sheet)		
This Is	ternation	al Searching Authority found multiple inventions in this international application, as follows:		
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2.		As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.		
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